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The NETHERLANDS POULTRY MEAT INDUSTRY

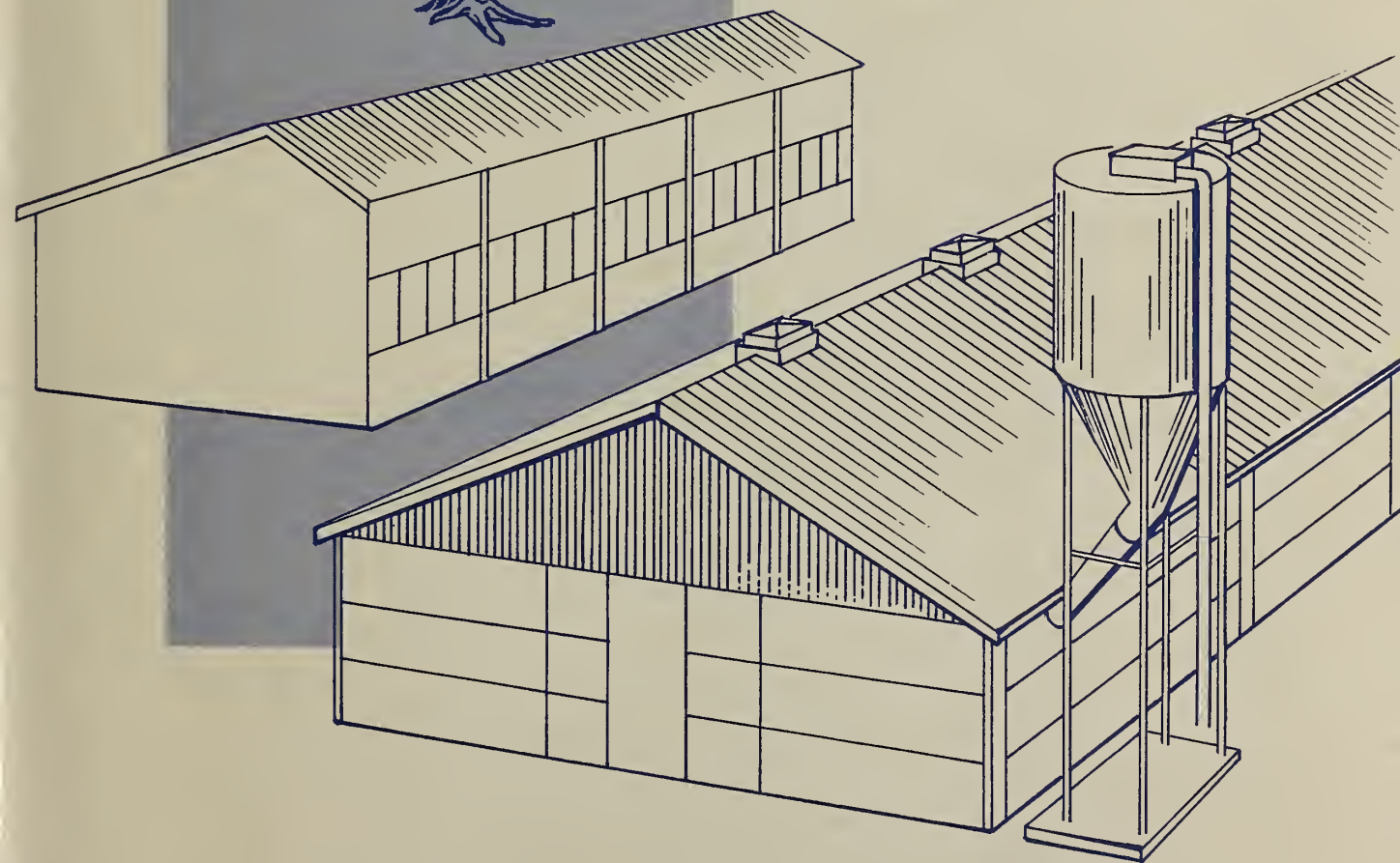
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FOREWORD

This report was initiated to determine production and marketing costs for broilers and turkeys in the Netherlands. In addition to costs, consideration is given to the structure and performance of the Dutch poultry industry. To help put Dutch costs in better perspective, a brief summary also is given to the U.S. production and marketing costs for broilers and turkeys.

It is apparent from the report that the efficient highly integrated Dutch poultry industry is being overprotected by the EC gate price, variable-supplementary levy system. In addition, it is being given undue advantage in marketing its products in the world market by the level of subsidization provided Dutch exporters.

This is clearly illustrated by comparing the production, processing, and marketing costs for Dutch and U.S. broilers. In 1970, this cost on a ready-to-cook basis for whole broilers was 33.12 cents per pound in the United States and 34.99 cents per pound for the Dutch. The Dutch grower in 1970 was protected by a whole broiler gate price ranging from 31.47 cents per pound to 32.17 cents to which was added a variable levy that ranged from 6.52 cents to 7.30 cents per pound and a supplementary levy of up to 6.2 cents per pound. The Dutch exporter received a whole broiler export subsidy of 7.4 cents per pound.

Production and marketing costs of efficient producers and processors in the other EC countries are believed comparable to the Dutch costs. It is evident, therefore, that the EC system as presently designed has the effect of protecting all poultry operations, including the inefficient producers and processors. The result is that the efficient are excessively protected and consumers pay a higher price than necessary.

In addition, subsidies assure exports of EC products at the expense of nonsubsidized exports from efficient third-country producers and bring world poultry prices to unnecessarily low levels.

David R. Strobel, Director
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CONTENTS

1	Summary
1 Major findings
3 Conclusions
3	Dutch poultry industry in perspective
3	..... Competitive position in world markets
4	..... Volume of exports
4	..... Composition of exports
5	..... Destination
5	..... Export prices
7	..... Production trends
8	..... Broilers and turkeys
8	..... Other poultry
10	Structure and performance of dutch poultry industry
10	..... Structure
10	..... Major producing area
10	..... Number of farms and flock size
10	..... Organization
10	..... Contracts
10	..... Hatcheries
10	..... Processing plants
12	..... Inspection
12	..... Commodity board for poultry and eggs
12	..... Performance and technical progress
13	Cost structure
13	..... Production
13	..... Broilers
14	..... Turkeys
15	..... Processing and marketing
15	Potential for increased production
16	Cost structure for U.S. poultry industry
16	..... Production costs
16	..... Broilers
16	..... Turkeys
17	..... Processing
18	Appendix

THE NETHERLANDS POULTRY MEAT INDUSTRY

An economic study of structure, production costs, and the potential for the Netherlands poultry meat industry is given. To help put Dutch costs in better perspective, a brief summary of U.S. production and marketing costs for broilers and turkeys is included.

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Summary

Major Findings

In recent years the Netherlands has become a dominant force in world production and trade of poultry meat and eggs. The Dutch poultry industry as a whole is large, efficient, and highly developed. The Netherlands poultry meat production, mainly broilers and turkeys, increased from 310 million pounds (live weight) in 1962 to 892 million pounds in 1970. Increased production has been accompanied by an expansion of equal magnitude for exports.

The Dutch broiler and turkey industries are undergoing basic changes—the number of producers is declining while the overall capacity and efficiency of the average grower are improving. The current cost/price squeeze has tended to accelerate the tempos of these changes.

Approximately 98 percent of all broilers and turkeys are produced by contract or on company owned or leased farms as part of a vertical integrated structure that covers all phases of activities from production to exporting the finished product. Basic management decisions, as well as financing, are centered in the compound feed industry and/or the processing industry.

Technological advances in production and processing have been a key factor in the industry's impressive performance. The average feed conversion ratio for broilers is now close to 2.10 compared with 2.44 in 1962. The grow-out period has been shortened 11 days since 1962. Yet, the size per broiler has increased from 2.65 pounds to 2.98 pounds. Mortality rate per 100 delivered chicks is now one-third that prevailing in 1962. Man-hours required to

produce 1,000 broilers have decreased at about 3 percent each year.

Overall production and marketing costs have increased as greater efficiencies have been offset by higher input cost. Onfarm production cost for broilers is approximately 20.31 cents per pound, the equivalent of 25.18 cents on a ready-to-cook (RTC) basis. Processing cost is calculated at 8.83 cents per pound. Allowing 0.98 cent for freight, 1 pound of broiler meat costs approximately 34.99 cents f.o.b. Dutch border (table 1). A comparison figure for U.S. broilers prepared for export is 33.12 cents. This lower figure for the United States is due mainly to lower chick and feed costs (figure 1 and appendix table 1).

The average cost to produce a 7.4-pound RTC turkey in the Netherlands is calculated at 31.66 cents per pound. This compares with an average production cost of 28.58 cents per pound in the United States for heavy hens and toms. A summary of the cost structure for turkeys is given in table 2.

Table 1.—The United States and The Netherlands: Production, processing, and marketing costs for broilers, 1970¹

[In cents per pound RTC]		
Item	United States	The Netherlands
Production	21.22	25.18
Processing	10.90	8.83
Inland transportation . . .	1.00	.98
Total f.o.b. cost	33.12	34.99

¹ For details see appendix table 1.

COMPARISON OF U.S. AND DUTCH PRODUCTION, PROCESSING, AND MARKETING COSTS FOR BROILERS* (READY-TO-COOK), 1970

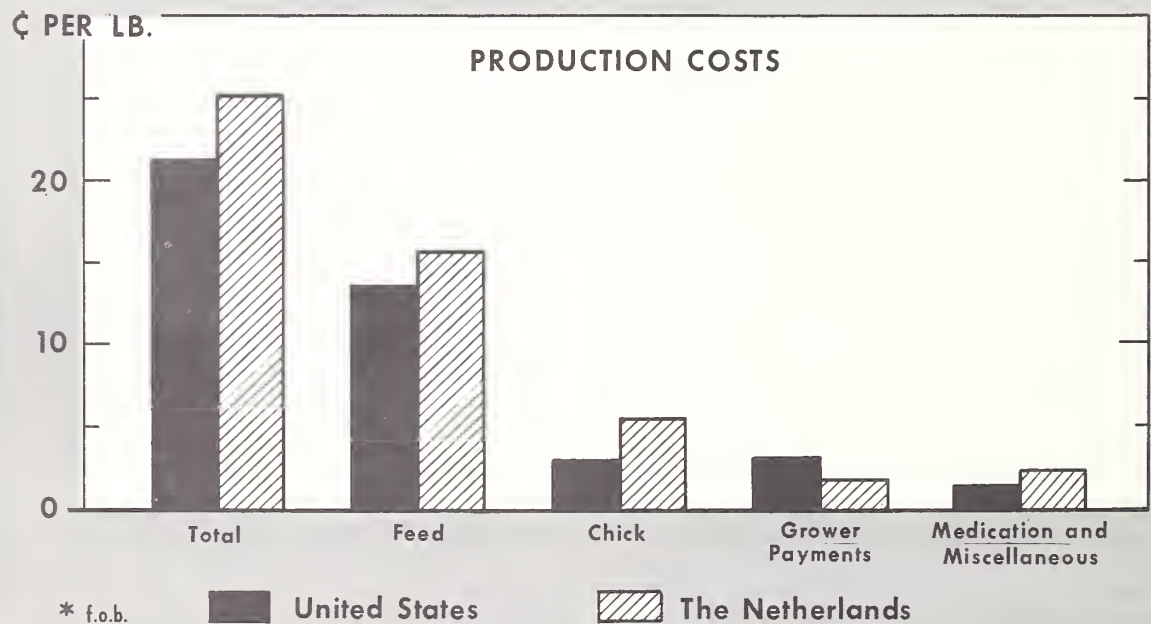
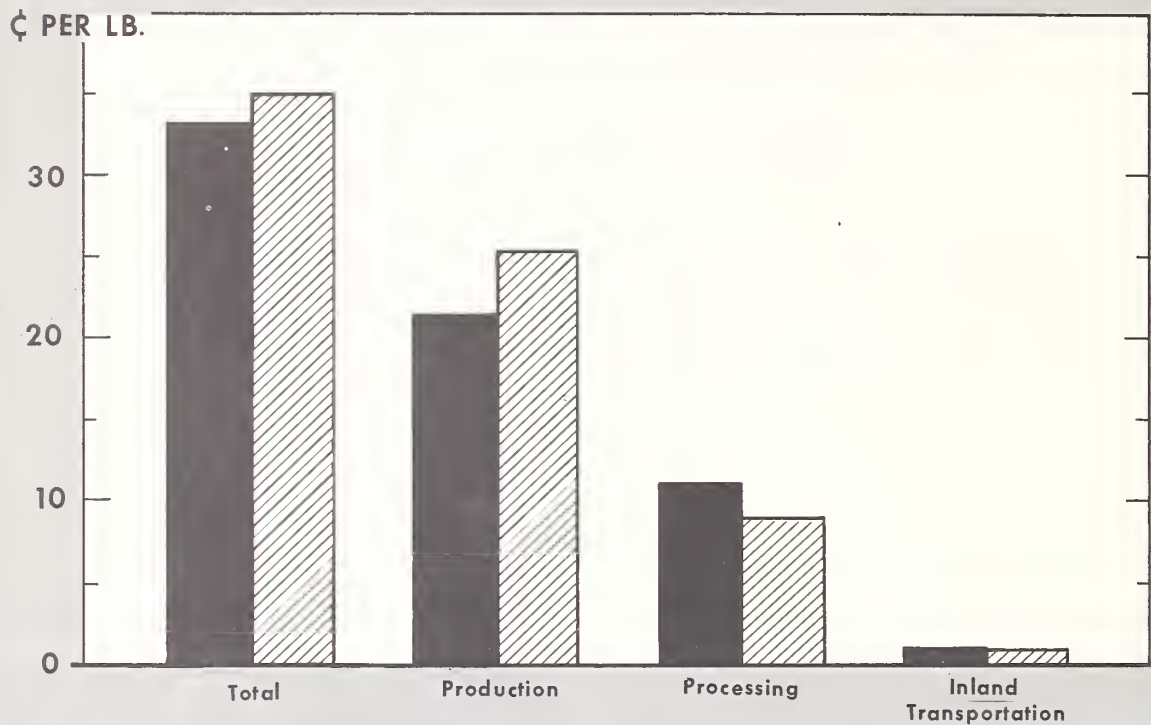


Figure I

Table 2.—The United States and The Netherlands: Production processing, and marketing costs for turkeys, 1970

[In cents per pound RTC]		
Item	United States	The Netherlands
Production	28.58	31.66
Processing	9.83	(¹)
Inland transportation ² . . .	1.70	.98
Total f.o.b. cost	40.11	- - -

¹ Not available.

² Transportation charge for turkeys in the United States is higher than for broilers since the main region of production for them is farther from shipping ports.

Conclusions

Facilities and know-how are present for further expansion of the Dutch poultry industry. Indications are,

however, that there is now less desire to expand than existed in recent years. With continued weak prices on the international market, a slower rate of expansion is anticipated for the immediate future.

The efficient broiler producers are being encouraged to switch to growing turkeys. This is likely to accelerate the pace in turkey production. The trend is towards heavier turkeys (12 to 20 pounds). Range production for turkeys is not practical. Because of the extremely limited supply of land and its high cost, it is unlikely that a range, or a very heavy, turkey will be produced.

Less efficient broiler producers are being squeezed out. Other alternatives in farming are limited mostly to egg and pork production. These too have experienced weaker prices in recent years. Moreover, the pork industry is highly cyclical.

It is difficult to determine the future course of the Dutch broiler and turkey industries on the basis of price and cost analysis alone. The Dutch appear determined to establish their position as the main producer of these products in the EC, even if it means taking a loss in the short run to do so.

Dutch Poultry Industry in Perspective

Competitive Position in World Markets

Since 1965, the Dutch have led the world in exports of poultry meat and eggs, and are now among the five leading exporters of egg products. These shipments have provided increased competition for U.S. poultry exports. The intensity of this competition is illustrated by the fact that in 1962 the Dutch supplied less than 23 percent of total foreign purchases of poultry meat by the world's eight largest poultry meat importers, whereas by 1970 Dutch supplies made up more than 53 percent of these imports.

The rapid expansion of Dutch poultry exports can be attributed to two major factors: (1) implementation of the EC Common Agricultural Policy (CAP) for poultry in July 1962 with the application of high levies against poultry imports into the Community from non-EC countries; (2) subsidization into markets outside the EC allowing sales below domestic prices.

The EC import system consists of two major elements: (1) a gate price¹ with its supplementary levy to make the gate price the effective minimum import price, and (2) a variable levy composed of a feed grain equalization charge and an additional fixed charge. Although gate prices for poultry are theoretically intended to equal the return to producers and transportation costs to the Community's border of poultry from third-country producers, in reality they are fixed above this level. This is demonstrated by the

fact that supplementary levies have been imposed on whole broilers since the Community's poultry policy was put into effect in 1962. If a poultry product is offered to Community importers by any third-country producer at a cost, insurance, and freight (c.i.f.) price below the established gate price, a supplementary levy usually is charged on all imports. This levy is not calculated so as to make up the difference between the gate price and the price at the EC border but is a flat rate representing the difference between the gate price and what generally is the lowest offer price, and has been changed at intervals as short as 3 days. Since the levy is generally, but not necessarily applied to imports regardless of whether they are offered below or above the gate price, this levy raises the price of the product above the gate price level for all but the lowest priced offers. In practice this results in a fixed minimum import price consisting of the established gate price plus the supplementary charge. Frequent changes in the supplementary levy triggered by the normal fluctuations in world market prices create uncertainty and further undermine the ability of third countries to compete in the Community.

The gate price for eviscerated broilers with giblets imported into the Community amounted to 32.1 U.S. cents per pound for the quarter beginning February 1, 1972. Total charges on such imports amounted to 13.1 cents per pound (variable levy of 6.9 cents and supplementary levy of 6.2 cents) for a total price of 45.2 cents. Prevailing gate prices and levy charges for other poultry products for the first quarter of 1972 are given in appendix table 2.

In addition to denying access to the EC poultry meat market, EC poultry exports to all Free World destinations are highly subsidized. Subsidy rate on broiler exports to

¹The gate price, often referred to as the minimum import price, theoretically is based on representative costs of production in non-EC exporting countries.

third-country markets during 1971 averaged 6.2 cents per pound. Although the amount varies, the situation is similar for other poultry meat, eggs, and egg products. Current export subsidies rates are given in appendix table 3.

Along with the high level of protection provided by the CAP, the competitive position of the Dutch poultry industry is further enhanced by its location relative to West Germany—the world's largest market for poultry meat.

Volume of exports.—Dutch poultry exports (ready-to-cook basis) exceeded 507 million pounds in 1970. This was four times the volume exported just prior to the establishment of the EC's CAP for poultry in 1962. Moreover, data for the January-June period suggest these exports may have exceeded 600 million pounds in 1971.

Live poultry has consistently made up approximately 10 percent of total Dutch poultry exports. In the 1960's culling hens and cockerels accounted for the main share of all live poultry exports. In more recent years, exports of live stewers, ducks, and geese have trended downward while foreign trade of live broilers and turkeys has greatly increased. Increasing numbers of live broilers from southeastern Provinces are now trucked to nearby slaughtering plants in West Germany on a regular basis.

Live poultry exports in 1970 totaled 24,000 metric tons: 50.3 million pounds on a slaughtered weight basis. This volume was over 5 times that for 1964, suggesting that live poultry sales also have benefited from the Community preference. The general trend and volume of total Dutch poultry meat exports since 1960 can be obtained from table 3.

To meet competition, the Dutch industry also has made rapid changes in the methods of preparing poultry for export. During the early 1960's only a small percentage of all broilers exported were fully eviscerated. By 1970 little if any slaughtered poultry was exported other than on a ready-to-cook basis. There has also been a rapid expansion in exports of frozen supplies.

Composition of exports.—The composition of Dutch poultry exports has changed in recent years to reflect

Table 3.—The Netherlands: Poultry meat exports, quantity and index, selected years, 1960-70

Commodity	Unit	1960	1964	1968	1970
Live poultry (ready-to-cook basis) ¹	Mil. lb.	13.3	8.9	22.0	50.3
Index: ²	Pct.	149	100	247	565
Poultry meat ³ . . .	Mil. lb.	125.8	165.3	349.4	456.9
Index: ²	Pct.	76	100	211	276
Total (ready-to-cook basis)	Mil. lb.	139.1	174.2	371.4	507.2
Index: ²	Pct.	80	100	213	291

¹ Conversion liveweight to ready-to-cook at 73 percent for 1960 and 1964, 75 percent for 1968, and 76 percent for 1970 and 1971.

² 1964 = 100.

³ Includes fresh, chilled, and frozen poultry meat, livers, specialties, and canned poultry.

changes in consumer demand and to more adequately meet growing competition in international markets. Poultry parts and specialties, while still a relatively small share of total exports, are becoming of greater importance. Whole broilers and stewers made up less than 88 percent of total slaughtered poultry meat exported in 1970 compared with 94 percent in 1968. This decline was replaced by whole turkeys and poultry parts. Chicken and turkey parts increased from 2 percent of total slaughtered poultry exports in 1968 to approximately 11 percent in 1970—an increase of 25 million pounds during this period.

As previously noted, close to 10 percent of total Dutch poultry exports in any given year is composed of live birds. General trends in the composition of slaughtered poultry exports can be observed from data given in table 4.

Broiler backs, necks, and wings accounted for close to one-half of all chicken parts exported in 1970, whereas in 1968 these items made up 56 percent of all foreign sales of poultry parts. At the same time, there has been a substantial increase in whole legs and deboned poultry meat exported. (See data in table 5.)

Table 4.—The Netherlands: Composition of poultry meat exports 1964, 1968, and 1970¹

Commodity	[Ready-to-cook basis]					
	1964		1968		1970	
	Quantity	Percent of total	Quantity	Percent of total	Quantity	Percent of total
	<i>Million pounds</i>	<i>Percent</i>	<i>Million pounds</i>	<i>Percent</i>	<i>Million pounds</i>	<i>Percent</i>
Chickens, young, whole . . .	124.5	75.3	300.3	85.9	373.1	81.7
Chicken parts	(²)	---	6.9	2.0	33.2	7.3
Stewers	29.2	17.7	26.5	7.6	27.8	6.1
Turkeys, whole	(²)	---	10.3	2.9	16.0	3.5
Turkey parts	(²)	---	.7	.2	2.0	.4
Other poultry ³	11.6	7.0	4.7	1.4	4.8	1.0
Total	165.3	100.0	349.4	100.0	456.9	100.0

¹ Does not include foreign sales of live birds. ² Not available. ³ Young Peking ducks, geese, and other poultry products.

Table 5.—The Netherlands: Composition of poultry parts exported, 1968 and 1970

Commodity	1968		1970	
	Million pounds	Percent	Million pounds	Percent
Total exports	349.4	100.0	456.9	100.0
Parts:				
Broiler:				
Backs and necks	15.2	4.4	17.2	3.8
Thighs and legs	8.5	2.4	13.1	2.9
Breasts	4.1	1.2	.8	.2
Drumsticks . . . . .	.2	.1	.3	.1
Wings	4.0	1.3	4.3	.9
Turkey:				
Thighs and legs . . . . .	.9	.2	.6	.1
Breasts . . . . .	.1	(¹)	---	---
Drumsticks . . . . .	.3	.1	.3	.1
Deboned poultry meat	(²)	(²)	4.6	1.0
Other poultry parts	1.3	.4	4.4	1.0

¹ Less than 0.5 percent.

² If any, given with other poultry parts.

Destination.—Larger quantities of Dutch poultry supplies are being subsidized to third-country markets as other EC members become more self-sufficient in poultry meat production. These subsidized exports have greatly increased competition in world markets, weakened international prices, and altered international poultry trade patterns. These exports have been particularly disruptive to U.S. poultry sales to third-country markets—Switzerland, Greece, and to new and developing markets in Latin America, the Middle East, and Asia. U.S. and Dutch poultry exports to selected markets are compared in figure 2.

The United States recently undertook a limited subsidy program for whole broilers to Switzerland and Greece in hopes of regaining its traditional share of these markets that had been lost to subsidized competition. In recent years, Dutch sales to these markets have not maintained the momentum reported during the mid-1960's. In fact, Dutch poultry meat sales to both markets were smaller in 1970 than in 1968 (table 6). This reduction was caused partly by increased competition from other suppliers, greater domestic production, and embargoes on Dutch poultry meat because of serious outbreaks of Newcastle disease during the last half of 1970.

Greater reliance upon third-country markets is illustrated by the fact that during 1970 other EC members received only 86 percent of all Dutch poultry exports, whereas, as recently as 1968, they took 93 percent of the total. Indications are that the downward trend will continue.

From 1964 through 1970 Dutch poultry meat exports to third-country markets increased by 45.5 million pounds. Austria and Switzerland have provided the largest markets for these exports. Since 1968 the Caribbean, Hong Kong, Japan, Singapore, and New Caledonia have taken larger quantities (table 6). The United Kingdom, USSR and East

European countries made sizable purchases in 1970. It is not clear, however, if these countries will provide regular outlets for poultry meat imports in the future.

Although four-fifths of poultry parts are to other EC members—mainly West Germany—larger supplies are being shipped to third-country markets. Hong Kong is the second and Singapore the third largest outlet. While the quantity is small, poultry parts also are marketed in Switzerland, Malaysia, and the Caribbean (table 7).

Dutch exports of poultry specialties, including prepared, canned, and poultry fat, approached 12 million pounds in 1970. The United Kingdom took three-fifths of these exports. Most of the remainder was to other markets in the E.C.

Table 6.—The Netherlands: Poultry meat exports by country, selected years, 1960-70

Country	[In million pounds]			
	1960	1964	1968	1970
West Germany	104.2	145.0	319.4	384.9
Other EC	3.7	2.3	5.4	8.5
Total EC	107.9	147.3	324.8	393.4
Austria	6.9	5.1	4.5	4.9
Greece	(¹)	(¹)	.8	.4
Switzerland	7.8	10.6	8.3	7.0
United Kingdom	(¹)	.1	(²)	7.4
Caribbean . . . . .	.1	(²)	2.4	3.1
Hong Kong	(¹)	.3	2.6	3.0
Japan	(¹)	(¹)	.3	1.2
Malaysia	(¹)	.1	.4	.3
Singapore . . . . .	.2	(¹)	.7	1.3
New Caledonia	(¹)	(¹)	1.2	3.2
Other	2.9	1.8	3.4	³ 31.7
Total	125.8	165.3	349.4	456.9

¹ If any, included in other.

² Less than 500,000 pounds.

³ Includes 21.5 million pounds to U.S.S.R., 1.9 million to Czechoslovakia, 1.4 million to East Germany, and 1.8 million to Poland.

Export prices.—Statistical series of prices for Dutch poultry exports to various foreign markets are not available. Sufficient data are available, however, to indicate that because of subsidies, these supplies often are sold at less than cost and below prevailing world prices. An illustration of such sales took place in 1971 when top quality whole Dutch broilers were delivered to Japan at a c.i.f. price of 26 to 28 cents per pound as compared with a c.i.f. price of 36.2 cents per pound for U.S. grade A broilers. After allowing for subsidy payments of 5.8 cents it would appear that Dutch exporters took a loss of slightly over 8 cents per pound since costs associated with production, processing, and delivery approach 42 cents.

Provision for EC subsidy payments and the use of stabilization or equalization funds, or a combination of these elements, are such that losses in some markets are

U.S. AND DUTCH SHARE OF POULTRY IMPORTS BY SELECTED COUNTRIES

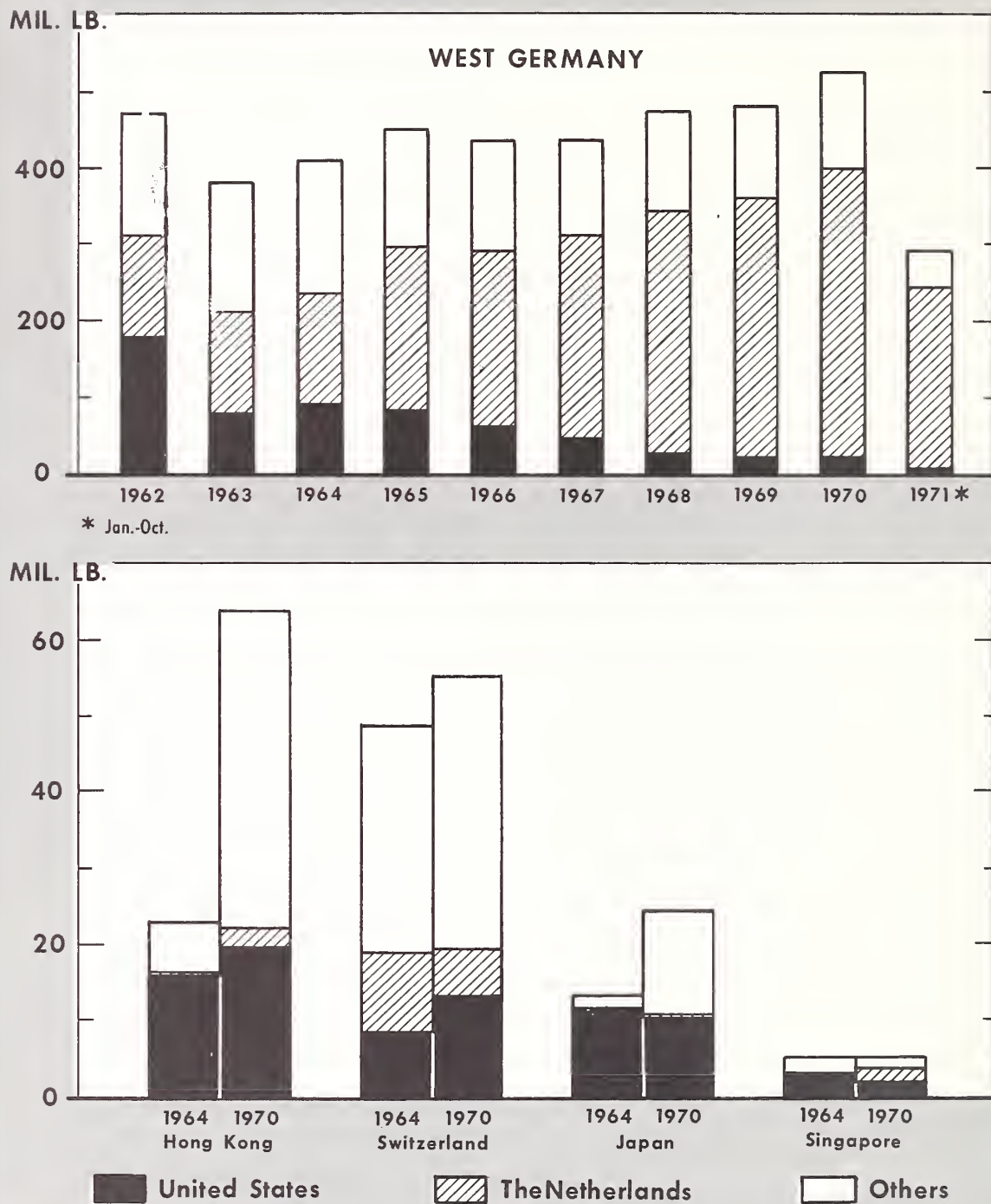


Figure 2

Table 7.—The Netherlands: Poultry meat exports by type for 1970

[In million pounds]

Destination	Fresh, chilled, or frozen				Other poultry ¹	Total
	Whole poultry	Parts and pieces	Offals	Livers		
Germany, West	349.7	30.5	0.7	1.3	2.7	384.9
Other EC	6.9	.4	0	(²)	1.2	8.5
Total EC	356.6	30.9	.7	1.3	3.9	393.4
Austria	4.5	(²)	0	.3	.1	4.9
Greece .....	.4	0	0	0	0	.4
Switzerland	6.3	.5	0	(²)	.2	7.0
United Kingdom .....	.1	0	0	0	7.3	7.4
Caribbean	2.6	.5	0	0	(²)	3.1
Hong Kong .....	.1	2.3	.6	0	0	3.0
Japan	1.2	0	0	0	0	1.2
Malaysia .....	.1	.2	0	0	0	.3
Singapore .....	.6	.7	0	0	0	1.3
New Caledonia	3.2	(²)	0	0	0	3.2
Others	³ 31.2	.1	.1	0	.3	31.7
Total	406.9	35.2	1.4	1.6	11.8	456.9

¹ Includes prepared, canned, and poultry fat.² Less than 500,000 pounds.³ Includes 1.9 million pounds to Czechoslovakia, 1.4 million pounds to East Germany, 1.8 million pounds to Poland, and 21.5 million pounds to USSR.

offset by higher than average return from others. Thus, the selected application of these measures partially explains how EC poultry exports often undersell U.S. products of equal quality in international markets.

Export prices for light- and medium-weight (less than 2.2 pounds) eviscerated broilers, f.o.b. Dutch border, ranged between 27.8 and 35.6 cents per pound during the 1968–71 period (table 8). In addition to this price, an exporter received a restitution payment of 2.4 percent ad valorem plus the prevailing export subsidy.

Light- and medium-weight birds receive a premium of 1.5 to 2 cents per pound over heavier broilers. Although no

clear seasonal pattern is exhibited, highest prices generally were received during summer months. Lowest prices usually occurred from November through January.

Production Trends

Under the protection of the EC Common Agricultural Policy (CAP) for poultry, the Dutch poultry industry experienced phenomenal growth during the 1960's. Advancements in nutrition, breeding, and disease control and improved management practices also contributed to the rapid rate of expansion.

Table 8.—The Netherlands: Midmonth broiler export prices, f.o.b. Dutch border, 1968-71¹

[In cents per pound]

Year	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Annual
Light and medium (less than 2.20 pounds)													
1971	30.05	32.50	31.60	30.40	28.45	31.00	32.70	33.85	32.55	33.75	32.20	32.15	31.77
1970	33.75	30.98	35.30	35.00	34.70	35.65	35.05	33.55	32.85	29.10	27.85	29.10	32.74
1969	32.09	(³)	31.70	(³)	31.70	32.30	33.90	34.30	34.05	33.85	35.30	34.40	33.36
1968	30.35	32.25	31.95	31.00	30.65	31.95	32.40	32.75	32.90	33.80	32.05	31.60	31.97
Heavy (over 2.20 pounds)													
1971	28.45	31.30	30.10	29.15	27.50	29.90	31.45	32.80	31.15	31.30	30.50	29.70	30.28
1970	31.45	34.08	32.83	32.83	32.20	33.30	33.45	32.10	30.70	27.20	26.00	27.20	31.11
1969	30.05	(³)	30.20	(³)	30.30	30.70	32.05	32.85	32.60	31.45	33.20	31.90	31.53
1968	28.80	30.05	30.05	29.40	29.60	31.00	31.30	31.55	31.80	32.30	30.35	29.40	30.47

¹ Frozen whole broilers with giblets, grade 1. ² Midpoint of quotation range listed ³ Not available.

The Netherlands was an important producer and exporter of poultry products prior to the establishment of the CAP in 1962, but its industry until this time had concentrated mainly on egg production. The production of poultry meat was principally a byproduct resulting from culling hens and cockerels. In more recent years the output of stewers, duck, and other fowl has remained static or trended downward while broiler and turkey meat production has greatly expanded. Expansion of the number of broilers and turkeys was not at the expense of the layers or other poultry. Rather, they were added enterprises, sparked mainly by advantages enjoyed in foreign markets.

Broilers and turkeys.—Prior to 1962 less than 50 million broilers were produced annually, and they accounted for only 45 percent of the 262 million pounds of total live poultry produced. By 1970, output had grown to 257 million birds or 84 percent of the 892 million pounds of all live poultry meat. During the 1963–66 period, production of broiler meat expanded at an average annual rate of almost 35 percent—equivalent to nearly 33 million birds per year. Since 1966 broiler increases have slowed to about 24 million birds per year, and the average rate of increase has declined to 17 percent (table 9 and figure 3). This slower rate of growth is partly due to the larger production base in recent years. It also reflects declining marketing opportunities—particularly in West European markets.

In 1970 poultry meat consumption in the Netherlands was reported at approximately 13 pounds per capita. This compares with about 18 pounds per capita in West Germany, 28 for France, and close to 50 for the United States. With such low per capita consumption, about three-fourths of the Netherlands' total production of broiler meat is available for export. While poultry prices compare

favorably with prices for other meats in the Netherlands, consumption of broiler meat has not expanded as rapidly as in some other West European countries or in the United States.

The production of turkeys on a large scale is of more recent origin than large-scale broiler production. A sharp increase in turkey production began in 1968 when output rose to 21.6 million pounds, live-weight basis, from an average of about 6.7 million pounds per year during the preceding 5-year period. Since 1968 turkey production has continued upward at an average annual rate of almost 24 percent (table 9). Greater production represents both increased turkey numbers and the trend towards heavier birds.

Approximately one-third of all turkey meat is exported on a ready-to-cook basis. These supplies have grown from less than 1 million pounds in 1965 to over 19 million in 1970 (appendix table 5).

Other poultry.—After broilers, stewers are the second largest type of poultry meat produced. From a record high of 122 million pounds (live-weight basis) in 1962, output declined to a low of 73 million by 1968. Production increased to 88 million in 1970 mainly because of heavy culling of layers in an attempt to keep the Newcastle epidemic under control.

The Netherlands duck and goose industries are small and are geared to serve the local and neighboring markets on specific holidays. Production of duck meat in 1970, at 22 million pounds (live-weight basis), was slightly less than half that for the early 1960's. Volume and trend for the various types of poultry meat produced during the past decade are shown in figure 4.

Table 9.—The Netherlands: Poultry meat production¹

Year	Broilers ²	Stewers	Turkeys	Ducks	Others	Total	Percentage of preceding year
	<i>Million pounds</i>	<i>Million pounds</i>	<i>Million pounds</i>	<i>Million pounds</i>	<i>Million pounds</i>	<i>Million pounds</i>	<i>Percent</i>
1960	93.7	113.1	2.2	34.0	0.8	243.8	---
1961	118.2	96.5	2.6	44.1	.9	262.3	107.6
1962	142.4	121.7	2.6	42.1	1.2	310.0	118.2
1963	187.4	106.7	3.3	31.5	1.1	330.0	106.5
1964	280.9	98.5	5.1	21.8	2.2	408.5	123.8
1965	357.1	89.1	6.6	20.7	.9	474.4	116.1
1966	447.8	78.9	7.7	19.8	1.1	555.3	117.1
1967	522.7	73.9	11.0	21.4	1.1	630.1	113.5
1968	560.2	73.4	21.6	15.0	1.1	671.3	106.5
1969	632.7	75.8	26.2	17.4	2.3	754.4	112.4
1970	747.4	88.0	33.1	21.6	2.1	892.2	118.3

¹ Live-weight basis. ² Includes grillers. Shuttle file.

THE NETHERLANDS: BROILER AND TURKEY PRODUCTION (Liveweight)

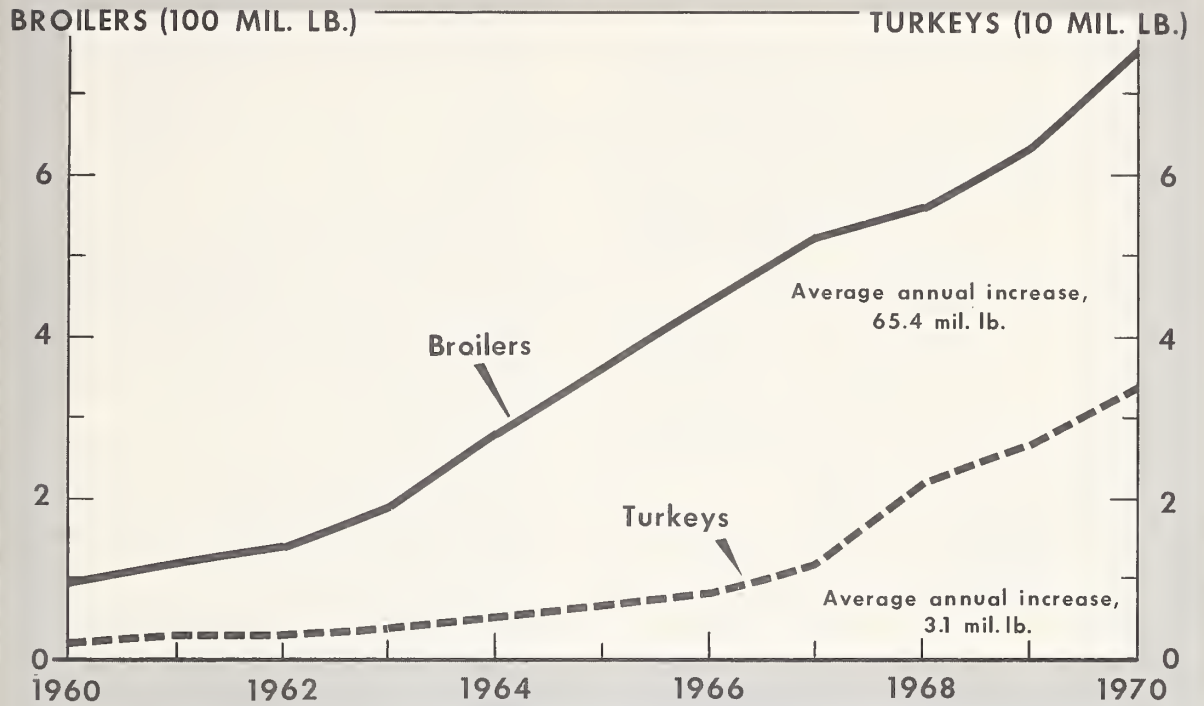


Figure 3

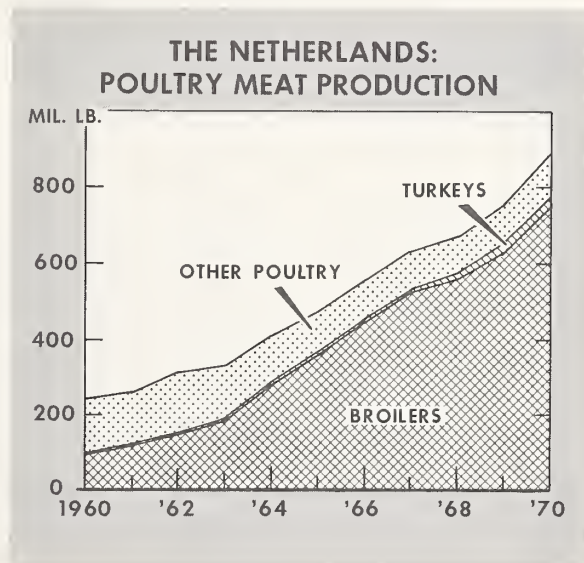


Figure 4

Structure and Performance of Dutch Poultry Industry

Structure²

Major producing area.—Approximately two-thirds of the Netherlands broilers and turkeys, numbering 30.3 million and 996,000 respectively on farms as of May 1, 1970, are produced in the three most southeastern provinces, Gelderland, Noord Brabant, and Limburg, (appendix table 7). This area contains much of the country's least productive soils. Yet, it is ideally located in relation to the West German market which provided an outlet for over two-thirds of all Dutch poultry exports in 1970.

Number of farms and flock size.—The Netherlands had close to 2,800 broiler growers in 1970. This is only 59 percent of the number reported for 1963. An average of 91,000 birds was sold per farm each year compared with 13,700 in 1963. In 1970 only 4 percent of the broiler farms sold less than 5,000 birds per year, whereas 43 percent had annual sales of 50,000 or more birds.

The turkey industry is so new that producer numbers were not officially tabulated prior to 1970. At that time, 382 turkey farms reportedly produced 996,000 birds. This would mean an average per farm production of 2,630 turkeys.

Organization.—Between 95 and 98 percent of the broiler and turkey output is produced by integrators on leased or company farms, or they are grown under contract by farmers. Integrators are limited largely to two agricultural producers' cooperatives and four private firms. The main base for all is the feed mill business.

Possibly the best way to visualize the integrated structure of the Dutch poultry industry is to consider the organization of a fully integrated broiler firm. The typically integrated broiler producing-marketing firm among other operations and functions includes a breeding station, a hatchery, a feed mill, and a processing plant. In addition, it may own or have contractual arrangements with a multiplication farm that produces eggs for broiler chicks or turkey poults. All these operations are controlled as a single decisionmaking unit. The origin of basic decisions and finance, plus the major movement of inputs and services, for such a firm is shown in figure 6.

Contracts.—Two basic types of grower contracts are used: (1) the cooperative contract and (2) the independent contract. As the name implies, the former is drawn up around the cooperative concept and is used by both of the Netherlands' largest farm cooperatives, Christian Farmers Association (CHV) and Cebeco. The story appears to be the same for turkeys and broilers.

The cooperative contract provides an offtake clause whereby payments to broiler producers, hatcheries, suppliers of hatching eggs, and part of the cost for feed is

predetermined and later adjusted to reflect actual market price received. Under such an arrangement, price and market risk are shared by all parties. The growers assume all risk for technical efficiency and for supplying building, equipment, and labor. The growers purchase the day-old chicks, feed, and other supplies available from the cooperative.

A special feature of the cooperative contract provides for a restitution payment to growers by the integrator (feed mill) should the producer price decline below a predetermined level. For the second quarter of 1970 that level reportedly was 18.7 cents per pound (1.50 guilders per kilo). A restitution of 0.25 Dutch cent (0.05 U.S. cent) was paid per kilo for each guilder the producer price declines below this level. At that point, the producer price was only slightly above this level.

The independent contract provides for growers to receive a fixed amount per pound for all birds marketed, regardless of any profit or loss from the flock. The growers normally make separate contracts within the integrated structure for day-old chicks, feed, and other inputs needed. The growers also are expected to supply labor, building, and equipment and assume all risk for technical efficiency. Price and market risk for the broilers or turkeys are taken by the integrator.

Hatcheries.—The trend is towards fewer and larger capacity hatcheries. The number of hatcheries for all types of poultry in 1970 was reported at 312, less than half the number for 1964. As of May 1970, according to the Netherlands Product Board for Poultry and Eggs, the country had a total presetting capacity at any given time of 35 million eggs. This would mean the average egg-presetting capacity per hatchery was 112,000 eggs.

Processing plants.—The trend is towards fewer and modern equipped slaughtering plants. Small facilities often operating part-time, however, are still of significance. As of 1970 poultry processing plants numbered 107—almost one-fourth less than was reported for 1964. The percentages being operated on a full-time basis are not known. It was indicated, however, that a relatively small number of plants processed most of the 892.2 million pounds of poultry slaughtered in 1970.

Increasing numbers of foreigners are being used to supply labor for this fast-growing industry. Living facilities for workers are often provided near large processing plants.

Some notion of processing efficiency is indicated by the conversion ratio of live weight to ready-to-cook weight for broilers at 76 percent and for turkeys at 83 percent. While heavier birds are being produced, this represents an increase of 1 percent for broilers and 5 percent for turkeys over the ratio prevailing prior to 1969. The rate of condemnation is reported at about 1 percent, as inspection methods are thought to be not as strict as those used in the United States. The FY 1971 condemnation rate for U.S. poultry was 3.48 percent.

²While the production and marketing structures for broilers and turkeys are similar in the Netherlands, normally both are not grown on the same farm.



Base 76865 7-70

Figure 5

READY-TO-COOK BROILERS OR TURKEYS

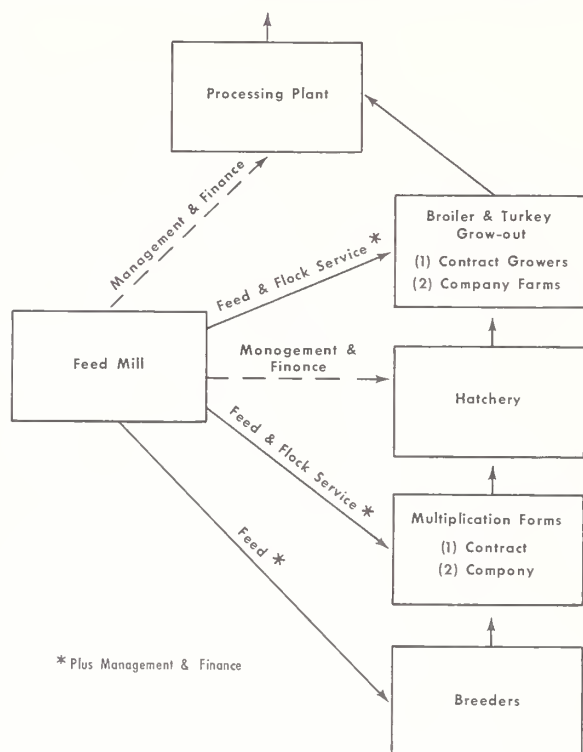


Figure 6

A modern Dutch processing plant will have annual capacity of 150 million pounds of ready-to-cook product. It includes a labor force of 800 to 850 persons on a 5-day, 8-hour shift. Such a plant would likely have three processing lines, two for broilers and one for turkeys.

Inspection.—The Netherlands does not have the equivalent of the Federal Inspection Service for Poultry that exists in the United States. Instead, processing plants apply their own inspection standards with the aid of the Government Veterinary Service. Indications are that 60 percent of total production was without this assistance as of 1970. A general inspection system to cover all slaughtered poultry is reportedly being considered.

Commodity Board for Poultry and Eggs.—Activities to stimulate domestic and foreign consumption of Dutch poultry as well as market research are coordinated by the Commodity Board for Poultry and Eggs. The Board is a semiofficial body representing all phases of the poultry industry. Funds for its operation are provided by industry and the government.

The Board operates under the supervision of the Ministry of Agriculture and Fisheries and has the responsibility of regulating all economic activities relating to the production and trade of poultry products. These include carrying out EC regulations in the Netherlands; that is, to collect levies and pay out restitution on exports as provided for the CAP.

Performance and Technical Progress

Technological advances in Dutch broiler production have been a key factor in the country's impressive performance. Pacing the field has been the advent of new technology in breeding, nutrition, and management. There are indications that the law of diminishing returns has asserted itself in these areas and perhaps greatest gains for the immediate future are to be made in the areas of processing and marketing. In this connection experimental projects of growing broilers in cages are being carried out. The ultimate aim is to reduce the amount of labor required to move birds from farm to processing plant. General adoption of this practice could have implications for nutrition and length of growout period.

Improved broiler strains and management practices have contributed to more efficient feed conversion and decreased mortality. Feed conversion ratios for broilers declined from 2.44 pounds in 1962 to 2.09 pounds in 1970 (table 10).

Table 10.—The Netherlands: Feed conversion ratio for broilers, selected years 1962-70

Year	Ratio ¹	Year	Ratio ¹
1962	2.44	1968	2.16
1964	2.32	1969	2.12
1966	2.32	1970	2.09

¹ Pounds of feed per pound of live broiler.

Agricultural Economic Research Institute (LEI).

Based on the size of Dutch broilers, the trend is thought to be correct. Broiler size has increased from 2.65 pounds in 1962 to 2.98 pounds in 1970. Heavier broilers are less efficient in converting feed into meat, but by U.S. standards Dutch broilers cannot be classified as heavy birds.

Farm labor for broiler growing also has become more efficient. Data supplied by the Agricultural Economic Research Institute (LEI) indicate labor required to produce broilers has declined from 18.8 hours per 1,000 birds in 1964 to 15.7 hours in 1970. Although these data appear low in relation to labor requirements by U.S. broiler growers, they are believed a true indication of the trend that prevails.

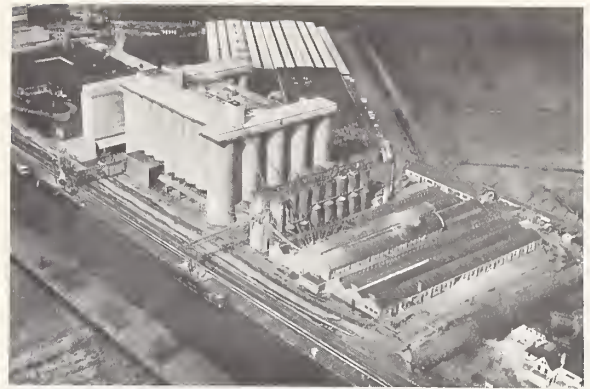
The mortality index also is a good indicator of technical progress of a poultry industry. The death rate per 100 delivered day old chicks has declined from 6.4 percent in 1962 to 2.4 percent in 1970 (table 11).

Technical progress also is illustrated by the manner in which the Dutch feed industry has been able to substitute cheaper ingredients for higher priced grains in the poultry ration. Moreover, these substitutions have not arrested the downward trend in the length of the growout period, now at about 50 days, (table 12), as compared with 61 days in 1962.

Table 11.—The Netherlands: Mortality rate per 100 delivered day-old chicks, selected years 1962-70

Year	Percent mortality ¹	Year	Percent mortality ¹
1962	6.4	1968	2.3
1964	4.9	1969	2.5
1966	2.8	1970	2.4

¹ Percentage based on losses for entire growout period.
Agricultural Economic Research Institute (LEI).



—The Netherlands: Feed mill complex.
(Basic management decisions, as well as financing, for the poultry industry are centered in the compound feed industry.)

Table 12.—The Netherlands: Finished weight and length of growout period for broilers, selected years 1962-70

Year	Finished weight	Growout period	Year	Finished weight	Growout period
	<i>Pounds</i>	<i>Days</i>		<i>Pounds</i>	<i>Days</i>
1962	2.65	61	1968	2.87	53
1964	2.76	59	1969	2.89	51
1966	2.87	55	1970	2.98	50

Agricultural Economic Research Institute (LEI).

Cost Structure

Production

Broilers.—Onfarm cost of producing broilers in 1970 was 20.3 cents per pound, live weight basis. This was a 0.6-cent increase over that for the previous year. Higher feed cost accounted for half this increase. Producers also paid higher prices for baby chicks, electricity, and fuel. Improvements in efficiency have occurred but they have been

largely canceled out by higher input costs. As a result the cost of producing broilers has increased for the last 3 years (table 13).

There are, of course, considerable variations in grower costs. Records made available by the Product Board and the industry tend to support data obtained from LEI. Moreover, these data suggest production costs on a per flock basis that tend to vary within a range of ± 10 percent of the norm.

Table 13.—The Netherlands: Costs of producing broilers, selected years, 1962-70 (live-weight basis)

Item	[In U.S. cents per pound]					
	1962	1964	1966	1968	1969	1970 ¹
Chick	4.450	4.700	4.600	4.062	4.300	4.392
Feed	12.460	12.213	12.597	12.190	12.211	12.541
Grower payments	1.872	1.921	2.010	1.520	1.391	1.351
Fuel and electricity .....	.796	.788	.759	.703	.703	.759
Vaccination and medication ...	.172	.231	.230	.172	.169	.172
Litter .....	.223	.198	.179	.125	.125	.145
Miscellaneous ² .....	.928	.737	.807	.819	.803	.948
Total costs	20.901	20.788	21.182	19.591	19.702	20.308

¹ Preliminary. ² Depreciation, interest repairs, taxes, insurances. Agricultural Economic Research Institute (LEI).

Feed is the largest cost item. Feed alone represents 62 percent of producer's costs. The retail price for broiler feed in 1970 was placed at \$6.62 per hundredweight. Data given in table 14 illustrate the rapid pace at which broiler feed prices have increased.

Table 14.—The Netherlands: Retail price for broiler feed, selected years, 1962-70

Year	Dollars per hundredweight	Year	Dollars per hundredweight
1962	4.82	1968	5.86
1964	5.15	1969	6.06
1966	5.89	1970	6.62

Agricultural Economic Research Institute (LEI).

It is a common practice in the Netherlands for one ration to be used for both starter and growout periods. Composition of the ration used by one of the large cooperatives, as of March 8, 1971, is given in appendix table 8.

Chick cost is the second largest item in producers' cost structure—accounting for close to 22 percent of the total. Average per chick cost was 13.11 cents in 1970. This is equivalent to 4.40 cents per pound of live-weight broiler delivered. The trend in chick cost for recent years is given in table 15.

Table 15.—The Netherlands: Prices for day-old broiler chicks, selected years, 1962-70

Year	Dollars per hundred	Year	Dollars per hundred
1962	11.92	1968	11.77
1964	12.97	1969	12.43
1966	13.20	1970	13.11

Agricultural Economic Research Institute (LEI).

Grower payments, unlike other production costs, have decreased in recent years (table 13). They amounted to 1.351 U.S. cents per pound live weight in 1970. This was 7 percent of the total cost to produce a broiler, whereas grower payments accounted for close to 10 percent of the total in 1966. It is not clear from available data if these payments include housing and equipment costs—as it is often the practice for the integrator to build and equip the houses.

With no allowance for housing and equipment costs, at a grower payment of 1.40 cents per pound, full-time producers would have annual incomes to labor and management of \$10,325 (basis: 5.5 flock turnover times 45,000 bird flock each times 2.98 pounds per bird delivered).

Reportedly 15.7 man-hours are required to produce 1,000 broilers. While the Dutch broiler industry is highly mechanized, these data are thought to understate the actual situation:

1. They are thought to omit substantial labor supplied

by housewives and/or children in what is normally classified as a one-man operation.

2. They might well exclude that time required to remove litter and prepare the house for the next flock.

Thus, calculation for income to labor and management based upon man-hours to produce broilers is likely to overstate the actual situation. Moreover, comparisons with U.S. data are further distorted because Dutch broilers are not as heavy as U.S. broilers when delivered to the slaughtering plant.

Other costs have shown little variation in recent years (table 13). Fuel and electricity cost approximately 0.760 cent per pound live weight medication, 0.170 cent; litter, 1.145 cent; other miscellaneous costs, depreciation, interest, taxes, insurances, etc., 0.950 cent.

The Dutch poultry industry has grown at such a rapid pace in recent years that litter cleaned from broiler and turkey houses is no longer considered an asset. As recently as 1967 it was valued at 0.10 cent for each pound of live-weight broiler produced. Reportedly, broiler and turkey growers can only dispose of this litter now by making it available to neighboring crop farmers on a free basis.

Turkeys.—Data are not readily available on commercial turkey production as it is a relatively new industry in the Netherlands. It is believed that turkey production will show significant gains in the future. Moreover, as the price of broilers has weakened in recent years, integrators have encouraged efficient broiler growers to switch to turkey production.

The trend towards medium-size turkeys appears in the making.³ Approximately one-fifth of all turkeys now are marketed at 9.3 pounds (4.25 kilo) or over. While cost data are not available it is generally held within the industry that medium to heavier turkeys, 10 to 18 pounds (4.5 to 8 kilo) provide greatest returns.

The limited costs data for turkey production that could be assembled are given in table 16. They are thought to

Table 16.—The Netherlands: Cost for producing turkeys, 1970

Item	Cost to produce 8.8-pound turkey ¹	Cost per pound ¹
	U.S. dollars	U.S. cents
Poult	0.443	5.032
Feed	1.350	15.336
Grower payment .....	.148	1.681
Fuel .....	.055	.625
Vaccination and medication ..	.035	.398
Litter and electricity .....	.067	.761
Housing and equipment ....	.168	1.908
Miscellaneous ² .....	.116	1.318
Total costs	2.382	27.059

¹ Live-weight.

² Includes interest for poult, debeaking, allowance for 4.25 mortality rate and water.

³ Medium to heavy turkeys have better feed conversion ratio plus are better for processing into parts than are light birds.

represent the cost of more efficient producers to grow a flock of 20,000 turkeys to an average live weight of 8.8 pounds each.

Two turkey rations being used by one of the largest cooperatives during the earlier part of 1970 are given in appendix tables 9 and 10.

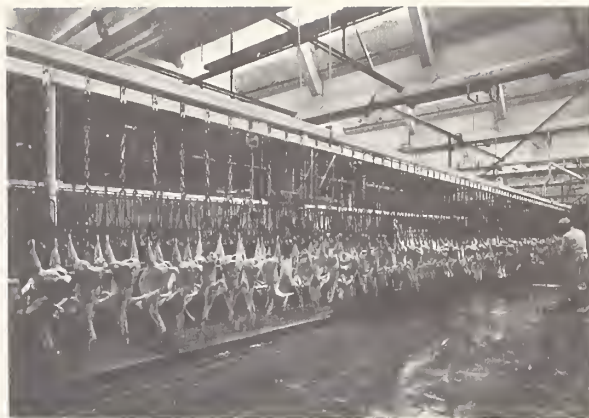
Processing and Marketing

As for growers' costs, there are also considerable variations in processing costs between various slaughtering facilities. Data assembled for broilers indicate a processing cost of 8.83 U.S. cents per pound (0.71 guilder per kilo) is probably representative for the industry. This cost covers drainage, calibration, bags, export box, strapping, freezing, storage, labor, and the administrative costs associated with these operations.

Slaughtering plants (fig. 8) have been able to use their facilities more efficiently in recent years with the trend towards contract growing and integration. However, higher labor costs and increased production of poultry parts appear to have more than offset any efficiencies that have occurred. A greater use of shrinkable wrap instead of polyethylene bags also has driven costs up. Separate cost data for processing parts are not available. Parts accounted for 8.5 percent of all turkey exports and about 3 percent of total foreign sales of broiler meat in 1970.

A rough breakdown of processing costs by major items indicate assembly costs make up 9 percent of the total; labor, 58 percent; package material, 7 percent; and other miscellaneous items—water, electricity, equipment maintenance, interest, and management,—the remaining 26 percent.

Processing cost data for turkeys are not available as this is a new industry. It is generally held within the industry, however, that processing costs for turkeys are slightly lower



Slaughtering plant.

than those for broilers. This would be inline with the cost structure for the U.S. industry. The lower figure for turkeys normally is associated with higher poundage processed relative to that of broilers in a given time period.

Almost all turkey exports and close to 60 percent of all foreign sales of broilers are shipped as frozen products. F.o.b. shipping cost to the Dutch border is reported at 0.98 U.S. cent per pound. No commission fees are involved as processors sell direct.

In 1970, 86 percent of Dutch poultry exports went to West Germany. Delivery is usually made directly to West German buyers in refrigerated trucks loaded at the processing plant.

Dutch processing costs would appear to be slightly lower than those for the U.S. poultry industry. While the latest practices and modern equipment are engerally used, the lower costs are thought to be mainly due to the smaller percentage of condemnations and the lower wage paid the labor force.

Potential for Increased Production

The Netherlands has achieved a relatively high degree of intensive production in both the broiler and the turkey industries. Moreover, technical ability is present and some structural changes are underway that make for considerable potential for expansion. Some broiler producers still follow a mixed type of farming. As these farms, that is the less efficient producers, continue to decline in number the overall performance of the industry will continue to improve.

Production of eggs and pork are the most readily available alternatives for broiler or turkey producers. Prices for eggs and pork meat are highly cyclical. Moreover, these industries are confronted with rising production costs. Thus, many producers are quitting farming.

Only small areas of coastal lowland and swamps remain that can be developed for agricultural purposes. While the extremely limited land supply is a deterrent to expansion, it is not the main deterrent. The primary obstacle is the rising cost of other inputs—particularly feeds, hired labor, buildings, and equipment.

Increased production costs and declining export prices have meant smaller profit margins in all phases of the industry. The major share of this profit squeeze has been absorbed by the compound feed industry. Most producers are fairly well protected from the vagaries of the market by contracts with integrators quoting the delivery price before chicks are started. However, grower contract payments have declined over time.

With increases in costs of production, the EC's CAP for poultry does not provide for a comparable increase in price for poultry meat sold in the Community. While the Dutch poultry industry enjoys some comparative advantages within the Community, an improved outlook is mainly dependent upon higher export prices. It would appear that

there is less incentive for broiler and turkey growers to expand output than there was a few years ago. Nevertheless, the facilities and know-how already are present for further expansion if domestic consumer demand grows and/or a greater demand materializes on the export market.

Cost Structure for U.S. Poultry Industry

Production and marketing costs for U.S. broilers and turkeys are considered in order to put into better perspective costs associated with various phases of the Dutch poultry industry. Material on the cost structure of the U.S. industry is based upon estimates made by a study group within the U.S. Department of Agriculture (USDA).⁴

The broiler industry in the United States is highly coordinated, with individual firms controlling most of the stages of their respective production from hatching the eggs through processing. As of 1970 approximately 90 percent of all broilers were grown under contract. Therefore, the estimated growing costs given here for a firm contracting broiler production are a synthesis of processing costs.

The turkey industry in the United States is not as highly coordinated as the broiler industry, although the trend is towards more coordination. In 1970 it was estimated that approximately 60 percent of all turkeys were grown under a production or marketing type contract. Hence, a much broader scope of production arrangements and prices exists for turkeys. The single production cost given for turkeys is subjected to considerable variation on the basis of different contractual arrangements and turkey weights.

Some indications of technical efficiency within the U.S. industry are illustrated in the data given in table 17. Feed required to produce 1 pound of live broiler has been reduced from 2.6 pounds in 1965 to 2.1 pounds in 1970. Likewise, labor required to produce broilers has been cut almost in half. Substantial progress in technical efficiency also has been made in turkey production.

Production Costs

Broilers.—The U.S. production cost for broilers amounts to 15.1 cents per pound on a live weight basis. Three items—feed, chicks, and contract grower payment—make up 92 percent of this total (table 18). Feed is the largest cost item, representing 63 percent of the production cost. This figure is based on a feed cost of \$90 per ton and a feed conversion ratio of 2.12. Grower payment at 2.25 cents per pound of live-weight bird was second, followed closely by chick cost at 2.15 cents.

Table 18.—U.S. broiler production costs in an integrated operation 1970¹

Item	Amount
	<i>Cents per pound live weight</i>
Chick cost at 7.5 cents each	2.15
Feed, \$90 ton, 2.12 conversion	9.54
Grower payment	2.25
Medication, sanitation, debeaking . . . . .	.25
Overhead, assembly . . . . .	.90
Total cost, delivered to slaughtering plant	15.09

¹ Based on live weight of 3.60 pounds and mortality of 3 percent.

Turkeys.—Estimating turkey production costs is affected by additional factors beyond those influencing broiler production costs. More types of turkeys are grown than broilers and at different weights. Hens and toms are

⁴Unpublished manuscript, "Production and Marketing Costs for Broilers and Turkeys," Poultry Group, Marketing Economic Division, Economic Research Service, USDA, June 1971.

Table 17.—United States: Feed and onfarm labor used per broiler and per turkey, 1965-70

Year	Broilers	Turkeys	Broilers	Turkeys
	<i>Pounds of feed per pound live weight</i>	<i>Pounds of feed per pound live weight</i>	<i>Hours per head</i>	<i>Hours per 100 pound</i>
1965	2.55	4.76	0.023	0.66
1966	2.57	4.54	.021	.59
1967	2.45	4.41	.019	.54
1968	2.29	4.59	.017	.49
1969	2.09	4.42	.015	.43
1970	2.07	4.04	.014	.39

Farm Production Economics Division, Economic Research Service, U.S. Department of Agriculture (USDA). Service, U.S. Department of Agriculture (USDA).

sold at different ages and weights and fryer-roasters at much lighter weights than hens or toms. The method of growing may be in confinement or on range and the duration of the growing period affects the utilization of fixed facilities and costs. Whereas most broilers are grown under contract, turkeys may be grown under contract, company grown, or grown independently. Many large growers of turkeys produce their own grain and mix their own feed, thus creating a different structure of feed costs than under the usual broiler contract.

The only estimate made for costs of producing turkeys was for a mixed flock of large turkeys not on contract (table 19). Feed is the dominant item of cost for turkey production, accounting for two-thirds of the estimated 22.6-cent cost to produce 1 pound of live-weight bird. This figure is based on a feed cost of \$82 per ton and a feed conversion ratio of 3.50. Poult cost is next in importance followed by labor costs.

Table 19.—U.S. turkey production costs, mixed flock, large turkeys, 1970 (estimated)¹

Item	Amount
	<i>Cents per pound live weight, no-contract</i>
Poults at \$0.58 each	3.20
Feed, 3.5 feed conversion, \$82 per ton	14.35
Fixed costs	1.00
Labor costs	1.95
Medication, debeaking, sanitation . . . . .	.50
Utilities and Miscellaneous . . . . .	.75
Financing charge on operating capital . . . . .	.30
Assembly . . . . .	.50
Total cost	22.55

¹ Assumes 20 pounds live weight and mortality of 10 percent.

Processing

Estimated processing costs for broilers and turkeys in a representative slaughtering plant is given in table 20. Such

Table 20.—United States: Costs of processing and preparing broilers and turkeys for export, 1970

[In cents per pound, RTC ¹]		
Cost	Broilers	Turkeys
Processing:		
In-plant processing cost . . .	4.40	
Freezer and storage . . . . .	.75	² 7.83
Drainage . . . . .	.50	
Shrinkable bag, and labor . . .	3.25	
Export carton	1.00	1.00
Strapping . . . . .	.50	.50
Administrative cost . . . . .	.50	.50
Processing total	10.90	9.83
Inland transportation	³ 1.00	⁴ 1.70
Grand total	11.90	11.53

¹ Broilers converted to RTC by a factor of 0.72 to reflect shrinkage and condemnation. Turkeys converted to RTC by a factor of 0.789 to reflect shrinkage and condemnation.

² This cost obtained by averaging the processing costs (including return on investment) for heavy hens and heavy toms.

³ This cost represents the transportation charge from major Southern broiler producing regions to east coast cities. This cost can range as high as 1.5 to 2.0 cents per pound if shipments are to the west coast.

⁴ This cost represents the transportation charge from the west north central region to east coast cities.

a plant for broilers would have an annual slaughter of 50 million pounds live weight operating at near capacity of 7,500 broilers per hour (one shift per day). This plant size was representative of the weighted average plant size for federally inspected plants, which accounted for 72 percent of slaughter in 1970.

The processing cost data for turkeys are estimated for a plant with an annual output of 30 million pounds live weight, which is representative of federally inspected plants. Costs are based upon a year-round operation of 50 percent of capacity and on a scale of operation of 2,000, 1,500, and 2,500 head per hour respectively of hens, toms, and fryer-roasters. Increasing the weight per unit will decrease per pound costs.

Appendix

Table 1.—U.S. and Dutch production, processing and marketing costs for broilers for export, 1970

[In cents per pound, RTC]

Item	U.S.	The Netherlands	Item	U.S.	The Netherlands
Production:			Processing:		
Chick	3.02	5.45	In-plant processing cost ...	4.40	} ⁽²⁾
Feed	13.42	15.55	Freeze and storage .....	.75	
Grower payment	3.16	1.68	Drainage .....	.50	
Vaccination medication and debeaking .....	.35	¹ .23	Bag and labor	3.25	
Miscellaneous	1.27	2.27	Export carton	1.00	
			Strapping .....	.50	
Total	21.22	25.18	Administrative costs .....	.50	
Inland transportation	³ 1.00	.98	Total	10.90	8.83
Total costs	⁴ 33.12	⁴ 34.99			

¹ Debeaking usually is not done in the Netherlands.

² Detail breakdown not available.

³ This costs represents the transportation charge from major Southern broiler producing regions to east coast cities. This cost can range as high as 1.5 to 2.0 cents per pound if shipments are to the west coast.

⁴ Includes processing cost.

Table 2.—EC: Gate price and variable levies effective for quarter February 1, 1972 - April 30, 1972

[In cents per pound]

Category	Gate price	Variable levy	Supplementary levy	Total charge
Whole poultry:				
Chicken, Type A	27.03	5.85	6.19	12.04
Chicken, type B	32.05	6.94	6.19	13.13
Chicken, type C	34.51	7.47	6.19	13.66
Turkey	36.79	8.91	4.99	13.90
Boned poultry	69.58	17.96	¹ 14.29	32.25
Chicken, halves and quarters	34.51	7.47	6.19	13.66
Turkey, halves and quarters	36.79	8.91	0	8.91
Wings	23.19	5.99	0	5.99
Backs and necks	16.06	4.15	5.67	9.82
Turkey breasts	60.70	14.71	0	14.71
Turkey drumsticks	29.43	7.13	4.82	11.95
Turkey legs and thighs	53.34	12.92	² 26.08	39.00
Other poultry breasts	52.88	11.45	0	11.45
Other poultry legs	46.47	10.07	.45	10.52
Other poultry parts	69.58	17.96	0	17.96
Edible offals	16.06	4.15	0	4.15
Prepared or preserved poultry:				
57% or more meat	89.20	23.03	0	³ 23.03
25-57% meat	52.52	13.82	0	³ 13.82
Other	35.68	9.21	0	³ 9.21

¹ Levy applicable for U.S. only.

² Levy applicable to U.S. and Canada only.

³ Maximum charges on imports are limited by GATT binding at 17 percent ad valorem on Jan. 1, 1972.

Table 3.—EC: Export subsidies for poultry to third countries, 1971 and first quarter, 1972

[In cents per pound]

Category	1971				1972
	February to April	May to July	August to October	November to January	February to April
Chicken Type I	6.5	4.9	4.9	4.9	¹ 4.9
Chicken Type II	7.4	5.9	5.8	5.8	² 5.8
Chicken Type III	7.8	6.3	6.2	6.2	³ 6.2
Ducks 85 percent prepared	5.6	4.7	4.7	4.7	6.2
Ducks 70 percent prepared	6.8	5.6	5.6	5.6	7.5
Guinea fowl	7.8	6.4	6.4	6.4	8.6
Turkey	5.6	4.8	4.8	4.8	6.3
Poultry parts boned	11.9	9.9	9.9	9.9	13.1
Poultry parts not boned (halves or quarters)					
From chicken	⁴ 7.8	6.3	6.2	6.2	³ 6.2
From ducks	6.8	5.6	5.6	5.6	7.5
From guinea fowl	7.8	6.4	6.4	6.4	8.6
From turkey	5.8	4.8	4.8	4.8	6.3
Whole wings, with or without tips	4.0	3.3	3.3	3.3	4.4
Breasts and breast parts (of poultry other than geese and turkey)	7.1	6.2	6.2	6.2	7.7
Legs and parts thereof (of poultry other than geese and turkey)	6.3	5.3	5.3	5.3	6.8
Poultry livers, fresh, chilled, frozen salted or in brine (other than livers of fatted geese or ducks)	7.0	5.8	5.8	5.8	7.7
Other preparations and canned products:					
Containing in weight 57% or more of poultry meat	17.3	12.7	12.7	12.7	16.8
Containing in weight 25% or more of poultry meat	10.4	7.6	7.6	7.6	10.1

¹ Greece and Switzerland 6.5 cents per pound. ² Greece and Switzerland 7.4 cents per pound. ³ Greece and Switzerland 7.8 cents per pound. ⁴ From April 1, 1971, 6.3 cents per pound except to Greece and Switzerland.

Table 4.—Broilers: Production, live weight and ready-to-cook weight, exports, and per capita availability, 1960-70

Year	Production ¹				Exports ²			
	Number	Live-weight	Ready-to-cook		Quantity	Pounds exported as percentage of preceding year	Percentage exports of total production	Per capita availability
			Quantity	Pounds produced as percentage of preceding year				
	Million	Million pounds	Million pounds	Percent	Million pounds	Percent	Percent	Pounds
1960 ...	36.5	93.7	70.3	---	41.9	---	59.6	2.5
1961 ...	45.5	118.2	88.7	126.2	54.6	130.3	61.6	3.9
1962 ...	53.9	142.4	106.8	120.4	60.2	110.3	56.4	3.9
1963 ...	65.4	187.4	140.6	131.6	96.1	159.6	68.3	3.7
1964 ...	101.8	280.9	210.8	149.9	121.5	126.4	57.6	7.4
1965 ...	127.4	357.1	268.0	127.1	189.9	156.3	70.9	6.4
1966 ...	159.3	447.8	336.0	125.3	212.4	112.4	63.2	9.9
1967 ...	180.9	522.7	391.3	116.5	256.1	120.6	65.4	10.7
1968 ...	195.2	560.2	418.5	107.0	308.0	120.3	73.6	8.7
1969 ...	220.8	632.7	485.9	116.1	342.7	111.3	70.5	11.1
1970 ...	256.8	747.4	568.8	117.1	411.4	120.0	72.3	12.1

¹ Includes grillers.

² Ready-to-cook basis. Does not include exports of live broilers that totaled 6.3 million birds in 1968; 10.2 million in 1969; and 12.5 million in 1970.

Based on official data published by Product Board for Poultry and Eggs, Central Bureau of Statistics.

Table 5.—Turkey: Production, exports, and per capita availability 1965-70¹

Year	Production		Exports ²		Percentage exports of total production	Domestic consumption ³
	Quantity	Pounds produced as percentage of preceding year	Quantity	Pounds exported as percentage of preceding year		
	<i>1,000 pounds</i>	<i>Percent</i>	<i>1,000 pounds</i>	<i>Percent</i>	<i>Percent</i>	<i>1,000 pounds</i>
1965	4,900	---	745	---	15.2	4,155
1966	6,000	122.4	1,870	251.0	31.2	4,130
1967	8,600	143.3	3,950	213.5	45.9	4,650
1968	16,830	195.7	11,310	286.3	67.2	5,520
1969	21,710	129.0	17,170	151.8	79.1	4,540
1970	27,440	126.4	19,110	111.3	69.6	8,330

¹ Ready-to-cook basis.² Includes exports of whole, parts, and live birds. Live turkey exports totaled 66,100 pounds in 1968; 1.2 million pounds in 1969; and 180,800 pounds in 1970.³ Equivalent to 0.3 pound per capita in 1965 and 0.6 pound in 1970.

Based on official data published by Product Board for Poultry and Eggs. Central Bureau of Statistics.

Table 6.—The Netherlands: Production and exports of poultry meat 1960-70¹

Year	Production					Exports ⁴	Percentage exports of total production
	Chicken		Turkey	Other ³	Total		
	Broilers ²	Stewers					
	<i>Million pounds</i>	<i>Million pounds</i>	<i>Million pounds</i>	<i>Million pounds</i>	<i>Million pounds</i>	<i>Million pounds</i>	<i>Percent</i>
1960	93.7	113.1	2.2	32.6	241.6	175.0	72
1961	118.2	96.5	2.6	45.0	262.3	186.5	71
1962	142.4	121.7	2.6	43.3	310.0	208.8	67
1963	187.4	106.7	3.3	32.6	330.0	228.6	69
1964	280.9	98.5	5.1	24.0	408.5	253.1	62
1965	357.1	89.1	6.6	21.6	474.4	345.7	73
1966	447.8	78.9	7.7	20.9	555.3	370.2	67
1967	522.7	73.9	11.0	22.5	630.1	429.7	68
1968	560.2	73.4	21.6	16.1	671.3	510.4	76
1969	632.7	75.8	26.2	19.7	754.4	557.8	74
1970	747.4	88.0	33.1	23.7	892.2	661.4	74

¹ Live weight.² Includes grillers.³ Duck meat accounts for more than 90 percent of this total in recent years.⁴ Includes exports of live and slaughtered poultry and poultry products.

Based on official data published by Product Board for Poultry and Eggs. Central Bureau of Statistics.

Table 7.—Broilers and turkeys: Number on farms by provinces, the Netherlands 1970¹

Province	Broilers	Turkeys
Groningen	567,700	8,880
Friesland	1,956,400	10,150
Drenthe	1,239,100	26,510
Overijssel (excl. N.O.P.) ..	3,288,000	41,880
Gelderland	5,054,500	53,550
Utrecht	525,500	7,060
Noord-Holland	660,000	7,400
Zuid-Holland	1,238,900	2,310
Zeeland	79,900	20
Noord-Brabant	8,863,200	368,910
Limburg	6,724,900	447,510
Landbouwgebieden:		
Noordoostelijke Polder ..	52,700	21,710
Oostelijk Flevoland	---	5
Total	30,250,800	995,895

¹ Numbers on farms as of the May 1970 census.

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Table 8.—The Netherlands: Broiler ration in general use¹

Ingredient	Percent of total ration
Corn meal	58.0
Soybean meal	28.0
Animal fat	4.0
Meat scrap	2.5
Molasses	2.0
Phosphorus	1.5
Dried whey	1.3
Calcium	1.0
Feather meal	1.0
Poultry byproduct meal .....	.5
Salt .....	.2
Total	100.0

¹ Ration in use as of Mar. 8, 1971.

Table 9.—The Netherlands: Turkey starter ration in general use¹

Ingredient	Percent of total ration
Corn meal	45.0
Soybean meal	32.0
Animal fat	4.0
Fish meal	4.0
Animal fat	3.5
Alfalfa meal	2.5
Feather meal	2.0
Molasses	2.0
Phosphorus	2.0
Dried whey	1.2
Poultry byproduct meal	1.0
Chalk .....	.5
Salt .....	.3
Total	100.0

¹ Ration in use as of Mar. 22, 1971.

Table 10.—The Netherlands: Turkey grower ration in general use¹

Ingredient	Percent of total ration
Corn meal	40.0
Sorghum meal	16.0
Soybean meal	13.5
Wheat grit	10.0
Manioc chips	5.0
Meat scrap	4.0
Alfalfa meal	2.5
Molasses	2.0
Dried whey	1.3
Chalk	1.2
Feed chalk	1.2
Animal fat	1.0
Poultry by product	1.0
Fish meal	1.0
Salt3
Total	100.0

¹ Ration as of Feb. 22, 1971.

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